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ELECTRONIC ARTS®

3D ATLAS™

A MULTIMEDIA EXPEDITION TO
UNDERSTANDING PLANET EARTH



**WARNING: READ BEFORE USING
YOUR 3DO INTERACTIVE MULTIPLAYER™ SYSTEM.**

A very small percentage of individuals may experience epileptic seizures when exposed to certain light patterns or flashing lights. Exposure to certain patterns or backgrounds on a television screen or while playing video games may induce an epileptic seizure in these individuals. Certain conditions may induce previously undetected epileptic symptoms even in persons who have no history of prior seizures or epilepsy. If you, or anyone in your family, has an epileptic condition, consult your physician prior to playing. If you experience any of the following symptoms while playing a video game—dizziness, altered vision, eye or muscle twitches, loss of awareness, disorientation, any involuntary movement, or convulsions—IMMEDIATELY discontinue use and consult your physician before resuming play.

Welcome to Electronic Arts 3D Atlas™!

Electronic Arts 3D Atlas puts the wonders of Earth at your fingertips. Watch Mount Pinatubo blow its ash high into the sky above the Philippines. See the vegetation on land shift and change over the seasons of a year. Experience the magic of discovery when you explore the scenery of our planet, and analyze statistical information from its nations.

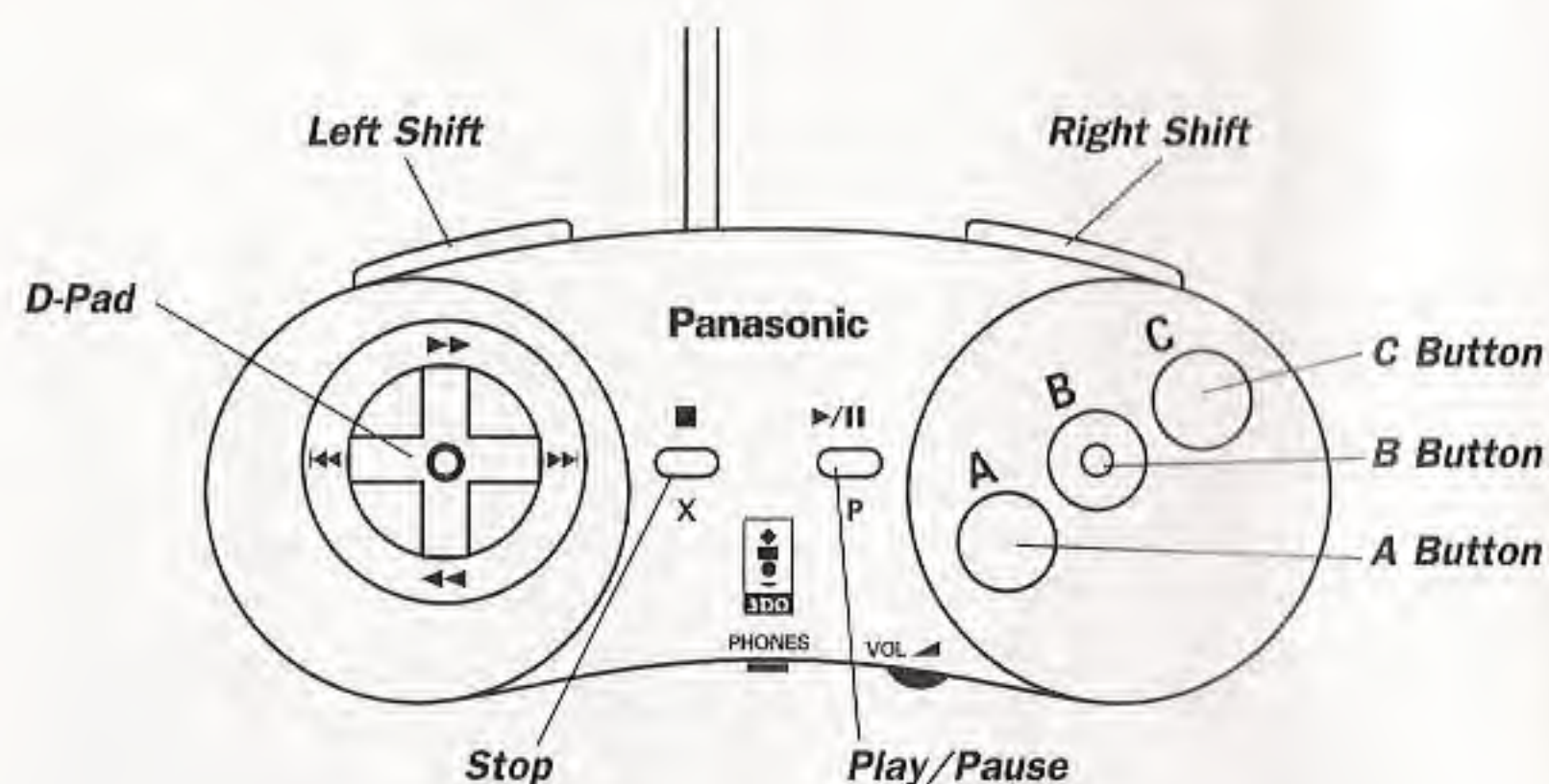
At the core of this program is a trio of globes: The Physical Globe, the Political Globe, and the Environmental Globe. The Physical Globe shows the planet's topography and highlights Earth's natural features. The Political Globe displays country borders and invites you to visit individual nations. While the Environmental Globe allows you to explore a cloudless and photo-realistic view of Earth based on thousands of satellite images. The three main globes in *3D Atlas* offer you the world you live in and more. Explore!

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Starting 3D Atlas

1. Turn ON the power switch on your 3DO Interactive Multiplayer™. The READY light indicates that the unit is on.
2. Make sure a Control Pad is plugged into the Control Port on the Multiplayer console (if not, turn the player OFF, plug in a Control Pad, and turn the player ON again).
3. Press the OPEN/CLOSE button. The disc tray extends.
4. Insert your *Electronic Arts 3D Atlas* disc into the disc tray (label side up) and press OPEN/CLOSE to retract the tray. The 3DO™ logo appears. (If you don't see it after a few moments, turn OFF the player and begin again at step 1.)



About the Main Globes

There are three main globes that present different views of Earth (Environmental, Physical, or Political). You can cycle through the globes to choose the one you want to view.

- To cycle through the three main globes, press **B**.

The **Physical** globe offers a topographical view of Earth's land masses. Access to exhibits related to the physical features of Earth; such as rivers, lakes, and elevation, as well as natural cycles and processes.

The **Environmental** globe combines thousands of satellite pho-

tographs to depict Earth as it appears from space (without clouds). Study Earth's environment and humanity's effect upon it.

The **Political** globe displays the nations of Earth and their international boundaries. Use the Political globe to learn about a nation's geography and compare relative sizes of countries.

Getting Around

There are two different modes used to access the features in *3D Atlas*: Navigation mode and Menu mode. When the globe is bright and the menu is dimmed, you're in Navigation mode. When the globe is dimmed and the menu is bright, Menu mode is active.

- To switch between modes, press **C**.

Navigation Mode

In Navigation mode you control globe rotation.

- To rotate the globe, D-Pad in any direction.
- To zoom in, press **Right Shift**—to zoom out, press **Left Shift**. A highlighted box on the miniature globe icon indicates the area of the globe visible on the screen.

Menu Mode

In Menu mode, you have access to Tools, Statistics, Stories, and more—as well as information on any items labeled on the globe.

To access menu items:

1. When you're in Menu mode, D-Pad **up/down** to move the highlight.
 2. Press **A** to choose the highlighted item.
- To back out of a menu or return to a previous screen, press **C** or **STOP**.

NOTE: When items are displayed on the main globe, you can D-Pad to highlight the items, and press **A** to learn more about them.

Find Locations (see Find Menu below)

Examine Statistics
(see Stats Menu, page 6)

View Stories
(see Stories Menu, page 9)

Use Tools
(see Tools Menu, page 13)

Play A Game
(see Game, page 17)



MAIN GLOBE SCREEN (SEE ABOUT THE MAIN GLOBES, PAGE 2)

NOTE: *3D Atlas* contains complete on-line help assistance. For additional information, please see *Help* on page 14.

Find Menu

The Find menu lists categories of items that *3D Atlas* can display on the globe: Cities, Continents, Countries, Map Pins, Mountains, Oceans & Seas, Ocean Trenches, Organizations, Rivers, U.S. States, and Volcanoes.

List of Categories

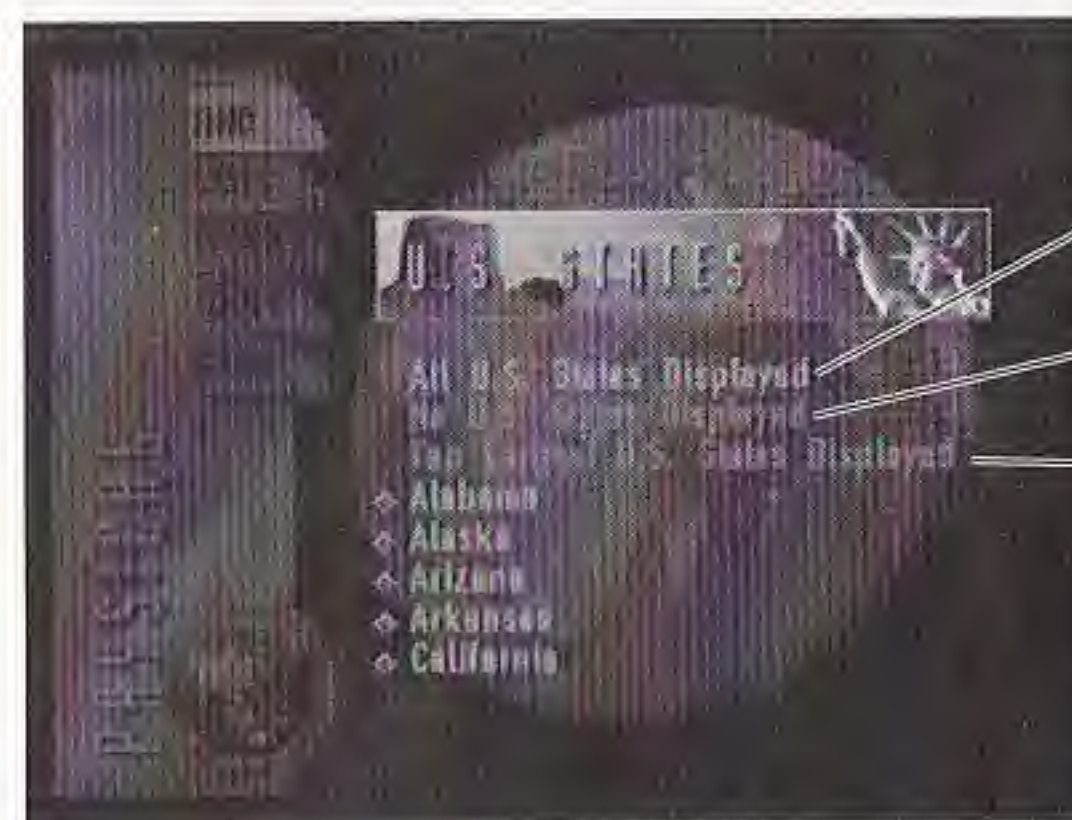


FIND MENU

To choose a category:

1. Highlight the Find menu and press **A**. The list of categories appears.

2. D-Pad **up/down** to highlight a category and press **A** to choose. The list of items in that category appears.



ITEM LIST

Display all items

Eliminate all displayed items

Display most prominent ten

To find an item in the list:

1. From the Item list, move the highlight to the item you want to display on the globe.
 - To scroll through the list one-by-one, D-Pad **up/down**.
 - To page forward through the list press **Right Shift**—to page back, press **Left Shift**.
 - To advance alphabetically by first letter, D-Pad **left/right**.
2. When the desired item is highlighted, press **A**. The globe appears with the item displayed.
3. To learn more about an item displayed on the globe, D-Pad to highlight it and press **A**.

In many categories, *3D Atlas* can display all of the items (or the most prominent ten) at once. These options are found at the top of the Item list.

- To eliminate items displayed on the globe, return to the Item list and choose the NO option from the top of the list. The items disappear from the globe.

NOTE: To eliminate items displayed on the globe from more than one category, the NO option must be chosen from each category used.

Stats (Statistics) Menu

3D Atlas includes statistics in eight categories: Agriculture, Economics, Energy, Environmental, Global, People, Physical, and Transportation. Display statistics on a Globe Chart, Line Chart, or Ranked List.

To display statistics:

1. From the Stats screen, D-Pad **up/down** to highlight STATS and press **A**. The list of Statistical categories appears.
2. D-Pad **up/down** to highlight a category and press **A** to choose. The list of statistics in that category appears.
3. Highlight the statistic you want to display.
 - To scroll through the list one-by-one, D-Pad **up/down**.
 - To page forward through the list press **Right Shift**—to page back, press **Left Shift**.
 - To advance alphabetically by first letter, D-Pad **left/right**.
4. When the desired statistic is highlighted, press **A**. The chosen statistical data appears on the currently chosen format; if appropriate.
 - To return to the Main globe from a Stats screen, press **STOP**.

CHARTS

Statistics can be viewed on three different charts depending upon the data available for the chosen statistic.

To choose a chart:

1. Highlight the Charts menu and press **A**. The list of charts appears.
2. D-Pad **up/down** to highlight a chart and press **A** to choose. The current statistical data appears in the chosen format; if appropriate.

NOTE: If the statistical data can not be displayed on the chosen chart, a message appears suggesting other format choices.

FIND

Use FIND to display the data specific to a certain country.

To display a country's statistics:

1. Highlight the Find menu and press **A**. The list of countries appears.
2. Highlight the country you want to display.
 - To scroll through the list one-by-one, D-Pad **up/down**.
 - To page forward through the list press **Right Shift**—press **Left Shift** to page back.
 - To advance alphabetically by first letter, D-Pad **left/right**.
3. When the desired country is highlighted, press **A**. The country's statistical data appears on the current chart; if appropriate.

NOTE: To find a country on the Line chart, you must first choose the country in the key that you want to replace.

- To choose the country you want to replace, D-Pad **up/down** to highlight it and press **A**.

Globe

The Globe chart displays data by coloring the nations according to their relative values for the chosen year of the current statistic.



GLOBE CHART

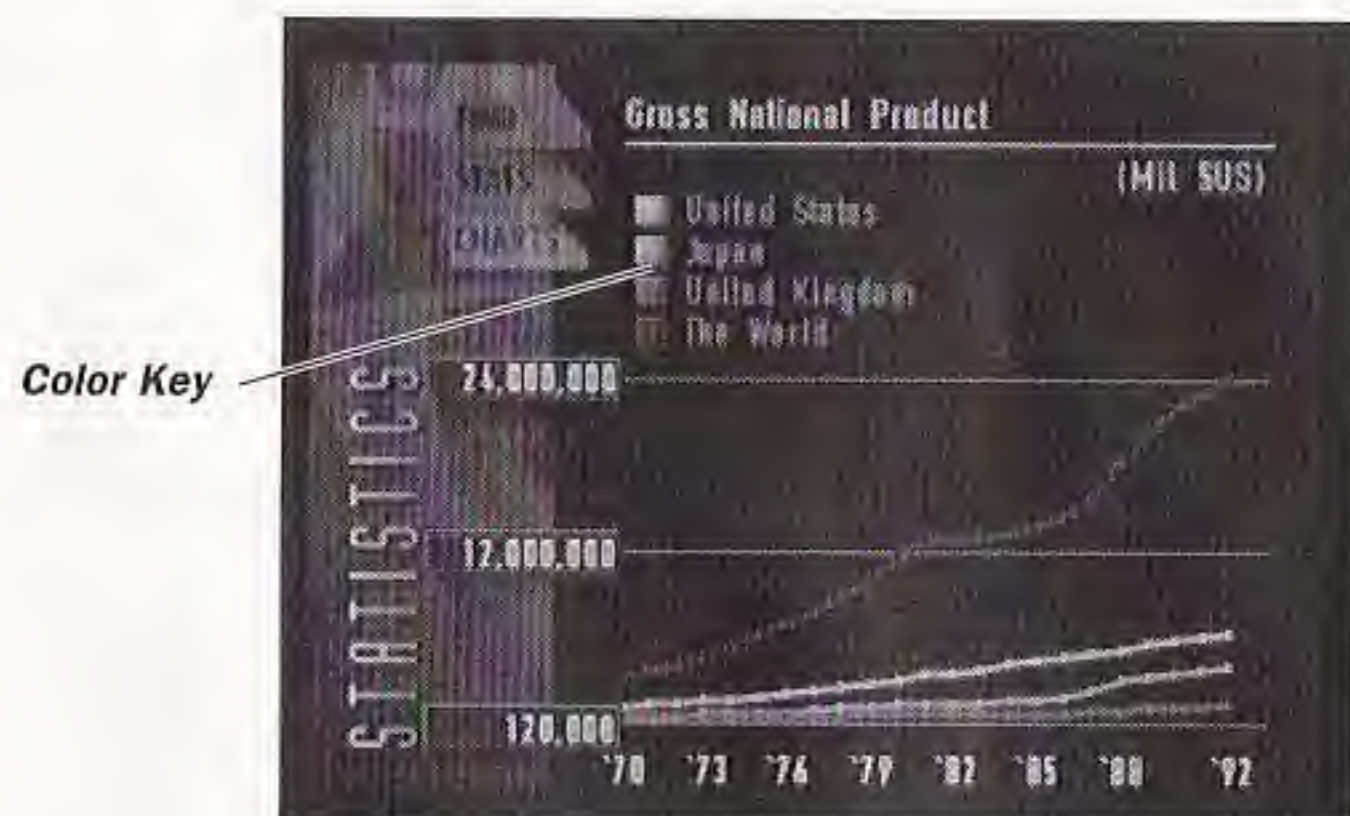
A color key on the left side of the screen shows the number ranges represented by the colors on the Globe. When data is available for more than one year, arrows appear around the year.

To change the year of the displayed statistic:

1. From the Globe chart, D-Pad to highlight a direction arrow around the year.
 2. Press **A** to advance the year in the direction of the highlighted arrow.
- To switch between Navigation mode and Menu mode, press **C**.

Line Chart

The Line chart shows trends over time for the statistics that have data spanning more than one year.



LINE CHART

The lines on the chart are color-coded to correspond with the countries listed in the key.

Ranked List

The Ranked list displays countries in order from highest (top) to lowest (bottom) for a specific statistic and year. When data is available for more than one year arrows appear around the year.

Gross National Product (MIL \$US)		
1	The World	23,921,574.0
2	United States	5,986,930.5
3	Japan	3,511,136.2
4	Germany	2,101,023.5
5	France	1,276,307.2
6	Italy	1,106,244.5

1992

To scroll list, highlight directional arrow and press **A**

RANKED LIST

To scroll through the list of countries:

1. From the Ranked list, D-Pad to highlight a direction arrow around the list.
2. Press **A** to scroll through the list in the direction of the highlighted arrow.

To change the year:

1. From the Ranked list, D-Pad to highlight a direction arrow around the year.
2. Press **A** to advance the year in the direction of the highlighted arrow.

Stories Menu

Use the Stories menu to access exhibits on Biomes, City Views, Globes, Reports, Timelapses, and 3D Flights.

To view exhibits:

1. Highlight the Stories menu and press **A**. The list of categories appears.
 2. D-Pad **up/down** to highlight a category and press **A** to choose. The list of exhibits in that category appears.
 3. D-Pad **up/down** to highlight an exhibit and press **A** to choose. The exhibit appears.
- To return to the Main globe from an exhibit, press **STOP**.

Biomes

A biome is a community of organisms in an ecological region distinguished by a particular terrain or landscape. Explore the biomes of Earth through these flights.

Each Biome flight ends with a map of the world that displays the locations of the biome you just viewed. You can examine this and other biome maps.



BIOME MAP

To examine other Biome Maps, highlight directional arrow and press A

City Views

City Views allow you to travel to four cities: Tokyo, New York, San Francisco, and London.

City View images are composed of satellite photographs. Try to locate some well-known landmarks. See *Appendix A* for a labeled example of each City View.



Highlight box indicates the area of the map visible on the screen

To scroll the entire map, D-Pad in any direction

CITY VIEWS

Globes

Globe exhibits detail these physical characteristics of Earth: Atmosphere, Biosphere, Earth By Night, Earth's Crust, Geosphere, Hydrosphere, and World Clock.

Find Locations (see Find Menu, page 4)



STORY GLOBE

To change the time, highlight directional arrow and press A

Atmosphere and Biosphere are timelapse exhibits. You can watch the stories as they unfold, or take control yourself and change the time manually.

To change the time:

1. Press **C** to enter Menu mode.
2. D-Pad **left/right** to highlight a directional arrow around the time and press **A**.

The Earth's Crust exhibit offers two new items in the Find menu: Rock Types and Tectonic Plates. Use these items to examine the Earth's crust.

The World Clock exhibit combines two satellite images of Earth—one by day, and one by night. This allows you to set the time and date for a specific area and study the relative times and dates around the world—as well as patterns of light and darkness over the course of the year.

To change the time and date:

1. Press **C** to enter Menu mode.
2. D-Pad in any direction to highlight a directional arrow around the time or date and press **A**.

Reports

Reports detail major environmental issues in our world. The reports lead into interactive exhibits, such as Story globes and Timelapses, that let you explore each issue further.

- To bypass the report and begin the interactive exhibit, press **A**.
- To exit the report and return to the Reports screen, press **C**.
- To pause the report, press **PLAY/PAUSE**. To resume the report, press **PLAY/PAUSE** again.

To view Story globes:

1. D-Pad in any direction to rotate the globe.
2. When you see an item you'd like to explore, press **C** to enter Menu mode.
3. Open the Find menu and choose the exhibit, or D-Pad in any direction to highlight the item on the globe and press **A**. A postcard appears.
4. D-Pad **up/down** to flip the postcard, **left/right** to page through the text.

Acid Rain and Global Warming reports end with Timelapse examples. View these examples in the manner described under *Timelapses* below.

Timelapses

Timelapses reveal changes over a period of time. Study the Exxon Valdez, Mt. Pinatubo, Plankton Blooms, Sea Ice, and Urbanization. You can watch the stories as they unfold, or take control yourself and change the time manually.



TIMELAPSE

To change the time, highlight directional arrow and press **A**

3D Flights

Take a narrated flight over some of Earth's most impressive mountain ranges: The Alps, Himalayas, Rockies, and Sheep Mountain.

- To exit the 3D flight and return to the Reports screen, press **C**.
- To pause the 3D flight, press **PLAY/PAUSE**. To resume the 3D flight, press **PLAY/PAUSE** again.

Tools Menu

Tools give you control over your *3D Atlas* experience. The tools available are: Grid On/Off, Help, Measure Distance, Place Map Pin, Remove Map Pin, Preferences, Sea Level Sims, and 3D Views.

- To return to the Main globe from a Tool screen, press **STOP**.

Grid On/Off

Choose GRID ON/OFF to display lines of latitude and longitude on the globe. The lines of the grid are 10 degrees apart—use them for accurate measurements and placement of map pins.

- The prime meridian is the vertical line at zero degrees longitude.
- The equator is the horizontal line at zero degrees latitude.

- The red latitude line in the northern hemisphere is the Tropic of Cancer.
- The red latitude line in the southern hemisphere is the Tropic of Capricorn.

Help

Go to HELP for assistance getting around *3D Atlas* and using its features.

To use help:

1. Highlight the Tools menu and press **A**. The list of tools appears.
2. D-Pad **up/down** to highlight HELP and press **A** to choose. The Basic Controls help screen appears.
3. D-Pad **left/right** to highlight a direction arrow and press **A** to scroll through pages.

Measure Distance

Use this option to measure distance between any two points on one of the three main globes.

To measure a distance:

1. Highlight the Tools menu and press **A**. The list of tools appears.
 2. D-Pad **up/down** to highlight MEASURE DISTANCE and press **A** to choose. A green flag appears in the middle of the globe. Latitude and longitude coordinates at the bottom of the screen show the flag's position.
 3. D-Pad the flag to the starting point of the distance you want to measure and press **A** to place it. A red flag appears.
 4. D-Pad the red flag to the ending point of the distance and press **A**. The distance between the two flags appears at the bottom of the screen.
- To remove a flag you decide not to use, press **C**.

Place Map Pin

You can mark any location on the main globes with a map pin. Once placed, map pins are saved in memory until you remove them—even when you turn off your 3DO Multiplayer!

To place a map pin:

1. Highlight the Tools menu and press **A**. The list of tools appears.
2. D-Pad **up/down** to highlight PLACE MAP PIN and press **A** to choose. A new map pin appears on the globe.
3. D-Pad any direction to position the pin and press **A** to place it. A cursor appears enabling you to color code the map pin and name it.
4. D-Pad **up/down** to cycle through color choices.
5. D-Pad **right** to move the cursor right.
6. D-Pad **up/down** to cycle through letters, numbers, and symbols.
7. D-Pad **left** to backspace.
8. When you're finished, press **A** to confirm the name, or press **C** to cancel and return to the prior screen.

Remove Map Pin

Allows you to remove map pins from the Map Pin list and your 3DO Multiplayer's memory.

To remove a map pin:

1. Highlight the Tools menu and press **A**. The list of categories appears.
2. D-Pad **up/down** to highlight REMOVE MAP PIN and press **A** to choose. A list of current map pins appears.
3. Highlight the map pin you want to remove.
 - To scroll through the list one-by-one, D-Pad **up/down**.
 - To page forward through the list press **Right Shift**—press **Left Shift** to page back.
 - To advance alphabetically by first letter, D-Pad **left/right**.
4. When the desired map pin is highlighted, press **A**. A text box appears asking you to confirm your decision. Press **A** again to confirm, or any other button to cancel.

Preferences

Use this option to set your preferences for *3D Atlas*. You can adjust Music, turn Narration, Sound Effects, and Globe Dimming ON/OFF, show Help Messages or Story Icons, and choose Units of Measurement (metric or imperial).

To set preferences:

1. Open the Preferences menu and D-Pad **up/down** to highlight a preference you want to change.
2. Press **A** to cycle through choices for the highlighted preference.
3. Once you've made all changes, press **B** to save.

Sea Level Sims

This option lets you create a three-dimensional simulation of sea level fluctuations.

To view a simulation:

1. Position the area you'd like to view in the center of the globe window.
2. Open the Tools menu and choose SEA LEVEL SIMS. The globe zooms to the centered section, tips it onto a flat plane, and simulates the topography of the region within the square.
3. Press **C** to toggle between Navigation mode and Sea Level mode.
4. When Sea Level mode is selected, D-Pad **up/down** to highlight a direction arrow around the Sea Level meter.
5. Press **A** to raise or lower the sea level in the direction of the arrow.
 - To rotate the Sea Level Sim, D-Pad in any direction.
 - To zoom in, press **Right Shift**—to zoom out, press **Left Shift**.

3D Views

View a three-dimensional section of Earth to get a real feel for the terrain.

To examine 3D views:

1. Position the area you'd like to view in the center of the globe window.
2. Open the Tools menu and choose 3D VIEWS. The globe zooms to the centered section, tips it onto a flat plane, and simulates the topography of the region within the square.
 - To rotate the 3D View, D-Pad in any direction.
 - To zoom in, press **Right Shift**—to zoom out, press **Left Shift**.

Game (Around the World)

Around the World is a fun game that tests your knowledge of flags, facts, and photos. To win the game answer questions to earn miles, and be the first to circumnavigate Earth. Up to four players can take part in a game, using one or two controllers.

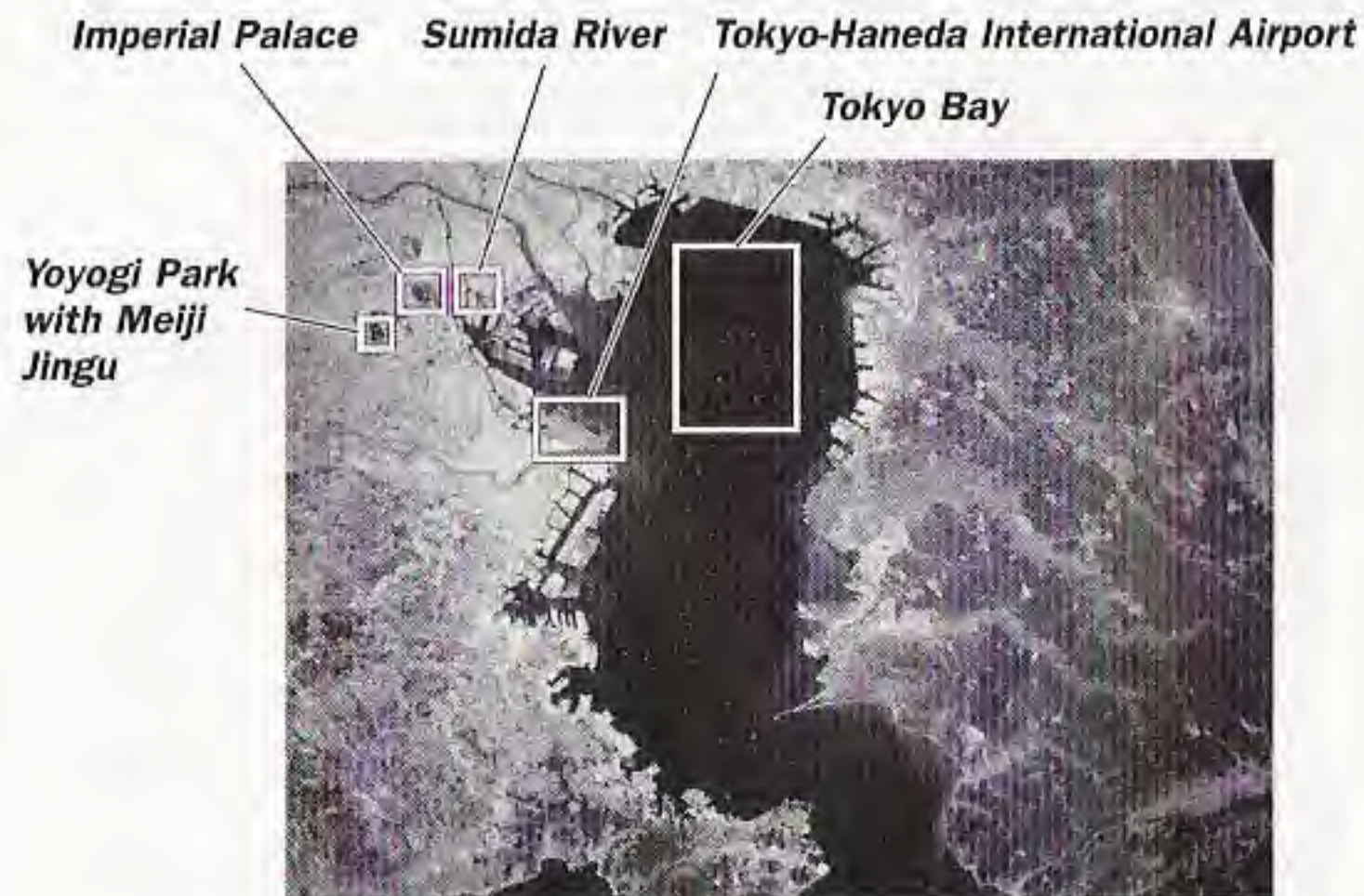
To play:

1. Highlight GAME from the Main menu and press **A**. The *Around the World* opening starts.
2. D-Pad **up/down** to highlight the number of players you want, then press **A**. The game begins.
3. Press **A** to bounce the question globe and get a question. The question and a list of possible answers appear.
4. D-Pad to the correct answer and press **A**.
5. When you are invited to travel, D-Pad to your desired destination and press **A**, or press **C** to decline and save up miles.
 - To quit a game in progress, press **STOP**. Press **A** to confirm, or **C** to return to the game.

Travel Delay: On random occasions, when you bounce the question globe, a travel delay occurs. Travel delays deduct 1000 miles (1600 km) from your total, and you lose a turn.

Appendix A:

City View Examples



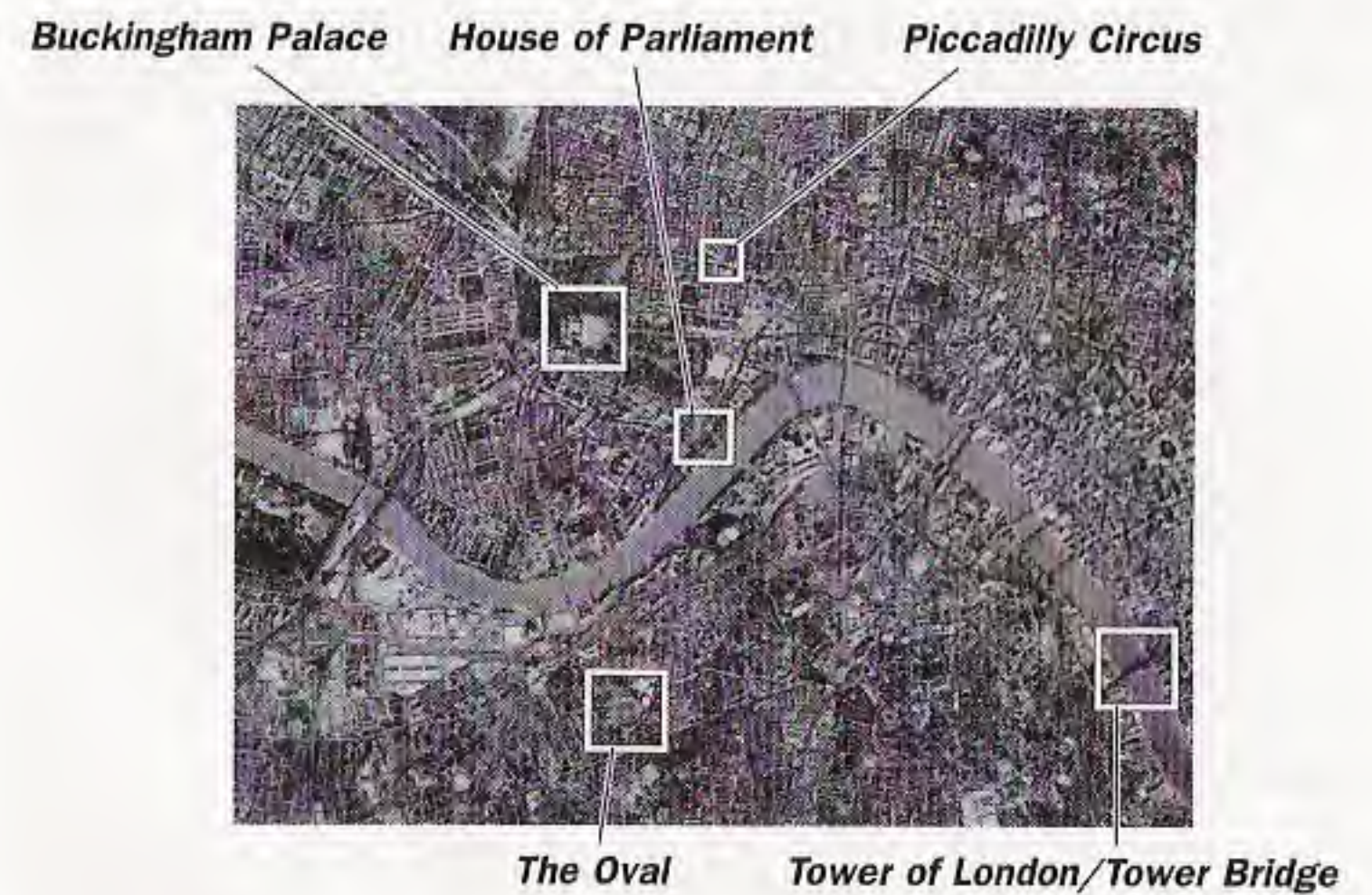
TOKYO



NEW YORK



SAN FRANCISCO



LONDON

Appendix B:

The Environmental Globe

The Environmental Globe is a depiction of Earth with all the clouds removed, and a little artistic license thrown in. Like the other globes in *3D Atlas*, computer graphics were used to wrap pictures of Earth around a sphere. Each globe appears different because a different picture was used. The globes were lit with a simulated sun (which is always above your left shoulder!) and then drawn from various angles.

The picture for the Environmental Globe is derived from real satellite images. Since a satellite cannot take a picture of Earth's entire surface at once, thousands of satellite images were mosaicked together to form one huge picture.

All these images came from a series of American satellites called AVHRR (Advanced Very High Resolution Radiometer). These satellites normally scan Earth for wide-scale changes in the atmosphere, ocean, and vegetation cover. Several space agencies in different countries started projects to join AVHRR images to make pictures of the continents. These continental mosaics were then combined to form a single huge image of Earth as if it were a flat map.

The image still required a lot of work to make it look good. For example, the seams between individual satellite images were visible, and some of the images still had cloud cover. We covered up these areas with additional images or expertly painted over them.

One of the biggest changes required was the coloring of the image. AVHRR satellites record green, red, and infra-red information—but not blue. Estimating the blue component required various mathematical manipulations of the color information we did have, reference images from other sources, and an expert eye. To make the image look even better on TV and computer screens, we shaded the oceans according to their depths. We blended this image with the green of plankton that appears near the surface of the oceans.

Finally, to add greater contrast and detail to the Environmental Globe and to provide a geologic foundation for the national boundaries of the Political Globe, we emphasized Earth's topography. This required land heights for the entire globe, but the best available topographic data was not very detailed.

To increase its detail, we applied a special fractal algorithm to the height data to make it the same resolution as the Environmental image while maintaining its accuracy. The resulting terrain data was treated as a huge 3D surface (it would effectively have 50 million polygons) that was lit from the side. (You can see this image whenever you stop rotating the Political Globe.) In addition to blending this terrain shading into the Environmental image, it was used to color and shade the Physical Globe.

Appendix C:

Satellite Imagery in *3D Atlas*

While most of the globe images in *3D Atlas* came from satellites using the AVHRR instrumentation, several other types of satellite data were also used. The City Views demonstrate the wide range of precision and scanning sizes available from different satellite technologies.

The image of San Francisco came from the U.S. based Landsat satellites. These satellites have been operating since 1972 and have produced a very large collection of imagery. They are able to resolve details down to 30 meters. This level of detail is good enough to see large highways and bridges but not local streets.

The image of New York City came from the French SPOT satellites. Operating since 1986, they can resolve details down to 10 meters. This level of detail clearly shows all streets and large buildings, and even an airplane on La Guardia Airport's runway.

The view of London was created by pictures taken by Russian spy satellites, which have only recently become available for publication. These black and white images can resolve details down to 2 meters (although the quality can fluctuate). You can easily see cars on many of the bridges over the Thames. The long shadows visible in London show that the time of day the satellite takes a picture can greatly affect its readability. The color was added to the original Russian image with data from the SPOT satellite, illustrating the usefulness of compositing data from two or more sources. This technique was used extensively in *3D Atlas*.

When examining the City Views, notice that the images with greater detail cover smaller areas. While Landsat collects images that are 150 kilometers square, the much more precise Russian spy satellite collects images only 4 kilometers square.

Not all pictures from space are taken by satellites. The image of Tokyo was taken with a hand-held camera by an astronaut in the space shuttle.

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 Special Thanks: Lee Kelgren, James Pearson
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 City Data: GRID
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